GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Subgroup
May 4-5, 1998
RECOMMENDATION DOCUMENT

FAA Control # 98-01-199

SUBJECT: RVR Accuracy and Conflict With Flight Visibility (Issue 99-02-220, *Use of RVR Minima*, submitted at ACF 99-02 also included)

BACKGROUND/DISCUSSION: There are two areas of concern pertaining to RVR, which present a problem to air carrier flight operations. The first is the increasing use of non-precision, or quasi-precision instrument approach procedures by air carrier aircraft to runways on which RVR is the controlling minimum. The second issue is the requirement under FAR 91.175(c)(2) and 91.175(d) that, from MDA or DH to landing, the pilot find the flight visibility to not be less than the visibility prescribed in the standard instrument approach procedure being used. (FAR 91.189 does not impose a flight visibility requirement upon Category II operations, although the DH concept is the same as for precision Category I operations.)

Although the FAA recognizes only one DH in fact, during low RVR conditions, pilots often rely on approach lights to descend below DH (or depart MDA). Until the runway is clearly in view, pilots are uncertain that they can make a safe landing. Thus, this sighting of the runway (or more typically HIRLs during low RVR conditions) is when the ***second*** visual-segment decision is made whether to land or miss the approach.

According to the FAA's air carrier inspector guidance material, RVR is not visibility:

Paragraph 495 of FAA Order 8400.10, Air Transportation Operations Inspector's Handbook:

> "*The following is a list of statements which describe what RVR is not:*
> *(a) RVR is not a measure of meteorological visibility.*
> *(b) RVR is not a measure of surface visibility or tower visibility.*
> *(c) RVR is not a measure of seeing conditions on taxiways, ramps, or aprons.*
> *(d) RVR is not a measure of seeing conditions at or near MDA or DH.*
> *(e) In the U.S., RVR is not measured or reported by a human observer.*
> *(f) RVR IS NOT 'VISIBILITY.' "*

The Pilot/Controller Glossary defines flight visibility:

"Flight Visibility - The average forward horizontal distance from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night."

Further, "RVR" is listed under the category "Visibility" in the Pilot/Controller Glossary, which means the FAA is telling the aviation community that RVR ***is*** visibility.

ALPA agrees with the FAA's air carrier arm that so eloquently makes the case that RVR is not visibility. At the least, RVR certainly is not flight visibility, and it is not prevailing visibility, and it is not ground visibility other than the ability to see HIRLs.

So, pilots are by regulation placed in the impossible situation of being required to assess flight visibility from DH/MDA to touchdown in a SIAP that has RVR as its controlling minimum. Not only is this an absurd legal dilemma, there are safety implications where prevailing visibility is at, or near zero, and the pilot is attempting to assess visibility, especially during a non-precision approach from below MDA to landing.

Additionally, many of the proponents of "constant descent" or "ILS look-alike" approaches want the MAP to be at the pseudo-DH point, yet they don't want to increase the visibility minimum from the Table 6 value to the distance from the MAP to the runway threshold. Because RVR is usually a very accurate measurement of the distance at which HIRLs can be seen, this creates a high likelihood that only marginal approach light visual cues will be sighted at the pseudo-DH/MAP when, in fact, RVR is at minimums. Pilots will tend to continue the approach under such conditions, thus we have built into the system a reduction in safety of flight by providing irrational RVR minimums.

Further, there are many RVR runways served by MALSR approach lighting systems. ALPA learned at the recent FAA/University of Arizona Approach Lighting Symposium that the wattage of the off-the-self flood lights used in MALSR installations has recently been decreased by almost 50% (from 120 watts to 65-75 watts). We believe the wisdom of using MALSR where RVR is the controlling minimum should be subject to review, including a comprehensive study with full industry participation.

RECOMMENDATION: This group needs to take the lead in initiating a review of flight visibility vs. RVR regulatory and operational concepts. Pilots either need to be informed about how to assess required flight visibility when RVR is controlling, or flight visibility needs to be removed from the regulation for approaches in which RVR controls. Further, we need to take a hard look at what is the rational and safe minimum RVR value to be authorized where the MAP is located prior to the runway threshold. Further, we need to review the wisdom of using MALSR ALS for runways that have RVR. Finally, we must separately review the rationality of allowing Category I precision approaches to RVR 1800, when the runway has only medium intensity approach lights.

COMMENTS: This proposal affects AFS-200 guidance to inspectors and flight crews, FAR 91.175, and TERPs 8260.3B.

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INITIAL DISCUSSION (Meeting 98-01): Wally Roberts presented this issue on behalf of ALPA. Two areas of concern relating to RVR and air carrier flight operations were presented for discussion: 1) ALPA believes an increasing use of non-precision, or quasi-precision instrument approach procedures by air carrier aircraft to runways on which RVR is the controlling minimum, and 2) The requirement under FAR 91.17c(2) and 91.175(d) that, from MDA or DH to landing, pilot's find the visibility to be not less than the visibility prescribed in the standard IAP being used. ALPA takes the position that the pilots cannot assess visibility and therefore are placed into a legal dilemma. Additionally, there is concern about use of MALSR systems for RVR, and that pilot's education must be increased. ALPA made the recommendation that the Instrument Procedures Subgroup members take the lead in initiating a review of flight visibility vs. RVR regulatory and operational concepts. AFS-420 was tasked to coordinate with AFS-220 for an initial response to the group at next meeting. ACTION: AFS-410.

MEETING 98-02: Howard Swancy, AFS-420, briefed that ALPA has been invited to co-chair a working group for this issue. The manager, AFS-400 has indicated that AFS-410 would serve as co-chair and initiate the meeting. A briefing should be available at the next meeting. ACTION: AFS-410.

MEETING 99-01: Howard Swancy, AFS-420, briefed that an AFS-410 representative has been assigned to work this issue; however, he was unable to attend this meeting. The JAA harmonization group is also addressing this issue. AFS-410 will continue working the issue and report at the next meeting. ACTION: AFS-410.

MEETING 99-02: An AFS-410 representative was not available to brief this issue. Howard Swancy, AFS-420, agreed to request that AFS-410 prepare a status update for inclusion with the minutes; however, the update was not received at the time the minutes were disseminated. Issue deferred to the next meeting. ACTION: AFS-410.

At this meeting, Wally Roberts, ALPA, presented the following RVR-related issue. The forum recommended that the new issue be addressed by AFS-410 concurrently with 98-01-199. ALPA agreed. Howard Swancy, AFS-4, was requested to provide a copy of ALPA's original issue papers to AFS-410 and request that they respond to both issues under 98-01-199

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Subgroup
November 2-5, 1999
RECOMMENDATION DOCUMENT

FAA Control # 99-02-220

SUBJECT: *Use of RVR Mimima*

BACKGROUND/DISCUSSION: *The FAA position, with which ALPA agrees, is that RVR is not visibility. Rather, it is a measurement only of the ability to see the HIRLs when on the runway surface in the TDZ. As a practical matter, when the controlling minimum is predicated on RVR, and when the prevailing visibility is less than the visibility equivalent of RVR, the pilot decision whether to continue descent for landing at DH or MDA is predicated solely on the sighting of ALS, then HIRL. In these conditions, the flight visibility conditions are often so minimal that the pilot is unable to sight any object in the visual segment of the approach flight path, other than ALS or HIRLs. Where penetrations of visual segment surfaces require an adjustment upwards of the visibility or RVR minimum, it is based on the premise that the higher minimum will enable the pilot to sight the penetrating obstacle(s). This premise is logical when prevailing visibility is the controlling minimum, but is illogical and potentially unsafe when the controlling minimum is RVR.*

RECOMMENDATION: *RVR should be denied as the controlling minimum where penetrations of a runway's visual surfaces exist.*

MEETING 00-01: An AFS-410 representative was not available to brief this issue at the last meeting. Howard Swancy, AFS-4, agreed to request that AFS-410 prepare a status update for inclusion with the minutes; however, the update was not received. Howard agreed to arrange AFS-410 participation at the next meeting.
ACTION: AFS-410.

MEETING 00-02: An AFS-410 representative was not present to discuss the issue. Discussion is continued to the next meeting. Wally Roberts, ALPA, noted that this issue is getting some action in the FAA/JAA harmonization effort. ACTION: AFS-410.

MEETING 01-01: Hooper Harris, AFS-410, commented that he was just getting 'spooled up' on the issue. Wally Roberts, ALPA, re-briefed the issue outlining ALPA's concern that RVR should not be the basis for straight-in minimums except for precision and RNAV (with VANV) approaches. It was recommended that Hooper also coordinate with AFS-430 to determine if any rulemaking is in progress or planned on this subject. Additionally, coordination should be accomplished with the AFS specialist involved with the JAA harmonization effort. Bill Hammett, AFS-420 (ISI), agreed to provide Hooper with a copy of the original ALPA issue paper and history to date. ACTION: AFS-410.
